

PATENT  
Attorney Docket No.: NEI-00106

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	Group Art Unit: Not yet assigned
Gary R. McLuen et al.	)	
	)	Examiner: Not yet assigned
Serial No.: Not yet assigned	)	
	)	
Filed: Herewith	)	<b>PRELIMINARY AMENDMENT</b>
	)	
For: <b>MULTI-WELL ROTARY</b>	)	260 Sheridan Avenue, Suite 420
<b>SYNTHESIZER</b>	)	Palo Alto, California 94306
	)	(650)833-0160

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

**AMENDMENTS**

IN THE DRAWINGS:

Please substitute the attached seven sheets of formal drawings, including Figures 1-9, for the original drawing sheets.

Clean version of specification, incorporating current amendments.

Page 1, Line 3

RELATED APPLICATIONS:

This Patent Application is a continuation of co-pending U.S. Patent Application Ser. No. 09/097,966, filed on June 16, 1998 and entitled MULTI-WELL ROTARY SYNTHESIZER.

Clean version of claims, incorporating current amendments.

1. (Amended) A synthesizer for forming a polymer chain by sequentially adding monomer units found in one of a plurality of reagent solutions, the synthesizer comprising:
  - a. a first vial and a second vial, each for holding a selective one or more of the plurality of reagent solutions during synthesis;
  - b. means for dispensing configured for dispensing the selective one or more of the plurality of reagent solutions into the first and second vials; and
  - c. means for selectively expelling material from the first and second vials, configured for engaging a drain associated with a selective one of the first vial and the second vial and thereby purging material from a selective one of the first vial and the second vial when the drain is engaged.
4. (Amended) The synthesizer according to claim 3 further comprising a motor coupled to the cartridge configured for selectively rotating the cartridge relative to the means for sequentially dispensing in a circular motion.
10. (Amended) The synthesizer according to claim 1 wherein each of the first vial and the second vial further comprise a bored interior having a consistent dimension for maintaining a consistent flow through the first and second vials and are configured to hold a frit for retaining a solid material above the frit.
11. (Amended) A synthesizer for forming a polymer chain by sequentially adding monomer units found in a plurality of reagent solutions, the synthesizer comprising:
  - a. a first vial for holding a selective one or more of the plurality of reagent solutions during synthesis;
  - b. a second vial for holding a selective one or more of the plurality of reagent solutions during synthesis;
  - c. a cartridge to hold the first vial and the second vial;
  - d. a dispensing system to dispense the selective one or more of the plurality of reagent solutions into the first and second vials; and
  - e. a purging system to remove material from a selective one of the first vial and the second vial, wherein the purging system is configured to engage a drain associated

with the selected one of the first vial and the second vial and purge material from the selected one of the first vial and the second vial when the drain is engaged.

17. (Amended) The synthesizer according to claim 11 wherein each of the first vial and the second vial further comprise a bored interior having a consistent dimension for maintaining a consistent flow through first and second vials and are configured to hold a frit for retaining a solid material above the frit.

20. (Amended) A synthesizer for creating a polymer chain by sequentially adding monomer units found in one of a plurality of reagent solutions, the synthesizer comprising:

- a. a plurality of vials each for holding material including a selective one of the plurality of reagent solutions during synthesis;
- b. a cartridge for holding the plurality of vials and dividing the plurality of vials into a first bank of vials including at least one of the plurality of vials and a second bank of vials including at least one of the plurality of vials;
- c. a first drain associated with the first bank of vials;
- d. a second drain associated with the second bank of vials;
- e. a dispensing system configured to sequentially dispense selective ones of the plurality of reagent solutions into the plurality of vials; and
- f. a purging system configured to purge material from a selective one of the first bank of vials and the second bank of vials, wherein the purging system is configured to engage the selected one of the first drain and the second drain to purge material.

21. Cancelled.

22. (Amended) The synthesizer according to claim 20 wherein the purging system further comprises a waste tube capable of selectively coupling with a selective one of the first drain and the second drain to purge material from the first bank of vials and the second bank of vials.

24. Cancelled.

25. Cancelled.

- 26. Cancelled.
- 27. Cancelled.
- 28. Cancelled.
- 29. Cancelled.
- 30. Cancelled.
- 31. Cancelled.
- 32. Cancelled.
- 33. Cancelled.
- 34. Cancelled.

Please add the following new claims:

- 35. (New) A synthesizer for forming a polymer chain by sequentially adding monomer units found in one of a plurality of reagent solutions, the synthesizer comprising:
  - a. a cartridge configured to hold a first vial and a second vial, each for holding a selective one or more of the plurality of reagent solutions during synthesis;
  - b. a dispensing system configured to dispense the selective one or more of the plurality of reagent solutions into the first and second vials; and
  - c. a purging system configured to selectively expel material from the first and second vials, wherein a selective one or both of the purging system and the cartridge are moved in relation to each other in order to allow the purging system to engage a drain associated with a selective one of the first vial and the second vial and thereby expel material from the selected one of the first vial and the second vial through the purging system when the drain is engaged.

36. (New) The synthesizer according to claim 35 wherein the cartridge holds the first vial and the second vial along a circular perimeter of the cartridge.
37. (New) The synthesizer according to claim 35 further comprising a motor coupled to the cartridge configured to selectively rotate the cartridge relative to the dispensing system in a circular motion.
38. (New) The synthesizer according to claim 35 wherein the dispensing system further comprises:
- a. a plurality of valves for controlling dispensing of the plurality of reagent solutions; and
  - b. a plurality of dispense lines wherein each of the plurality of the dispense lines is coupled to a corresponding one of the plurality of valves for delivering one of the plurality of reagent solutions to a selected vial.
39. (New) The synthesizer according to claim 35 wherein each of the first vial and the second vial further comprise a bored interior having a consistent dimension for maintaining a consistent flow through the first and second vials and are configured to hold a frit for retaining a solid material above the frit.

Version with markings to show changes made.

Please amend the application as follows:

IN THE DRAWINGS:

Please substitute the attached seven sheets of formal drawings, including Figures 1- 9, for the original drawing sheets.

In the Specification

On Page 1, line 3, please insert the following paragraph:

-- RELATED APPLICATIONS:

This Patent Application is a continuation of co-pending U.S. Patent Application Ser. No. 09/097,966, filed on June 16, 1998 and entitled MULTI-WELL ROTARY SYNTHESIZER. - -

In the Claims:

Please cancel Claims 21 and 24-34.

Please amend the claims as follows:

1. (Amended) A synthesizer for forming a polymer chain by sequentially adding monomer units found in one of a plurality of reagent solutions, the synthesizer comprising:
  - a. a first vial and a second vial, [wherein the first vial and the second vial are configured for holding] each for holding a selective one or more of the plurality of reagent solutions during synthesis;
  - b. means for dispensing configured for dispensing the selective one or more of the plurality of reagent solutions into the first and second vials; and
  - c. means for selectively expelling material from the first and second vials, configured for [coupling to] engaging a drain associated with a selective one of the first vial and the second vial[s] and thereby purging material from a selective one of the first vial and the second vial when the drain is engaged.

4. (Amended) The synthesizer according to claim 3 further comprising a motor coupled to the cartridge configured for selectively rotating the cartridge relative to the means for sequentially dispensing in a circular motion.

10. (Amended) The synthesizer according to claim 1 wherein each of the first vial and the second vial further comprise a [precision] bored interior [configured to hold a frit for retaining a solid material above the frit, and further wherein the first vial and the second vial are configured to maintain] having a consistent dimension for maintaining a consistent flow through the [precision bored interior] first and second vials and are configured to hold a frit for retaining a solid material above the frit.

11. (Amended) A synthesizer for forming a polymer chain by sequentially adding monomer units found in a plurality of reagent solutions, the synthesizer comprising:

- a. a first vial [configured to hold] for holding a selective one or more of the plurality of reagent solutions during synthesis;
- b. a second vial [configured to hold] for holding a selective one or more of the plurality of reagent solutions during synthesis;
- c. a cartridge to hold the first vial and the second vial;
- d. a dispensing system to dispense the selective one or more of the plurality of reagent solutions into the first and second vials; and
- e. a purging system to remove material from a selective one of the first vial and the second vial, wherein the purging system is configured to engage a drain associated with the selected one of the first vial and the second vial and purge material from the selected one of the first vial and the second vial when the drain is engaged.

17. (Amended) The synthesizer according to claim 11 wherein each of the first vial and the second vial further comprise a [precision] bored interior [configured to hold a frit for retaining a solid material above the frit, and further wherein the first vial and the second vial are configured to maintain] having a consistent dimension for maintaining a consistent flow through [the precision bored interior] first and second vials and are configured to hold a frit for retaining a solid material above the frit.

20. (Amended) A synthesizer for creating a polymer chain by sequentially adding monomer units found in one of a plurality of reagent solutions, the synthesizer comprising:
- a. a plurality of vials [wherein each of the plurality of vials is configured to hold] each for holding material including a selective one of the plurality of reagent solutions during synthesis;
  - b. a cartridge for holding the plurality of vials and dividing the plurality of vials into a first bank of vials including at least one of the plurality of vials and a second bank of vials including at least one of the plurality of vials;
  - c. a first drain associated with the first bank of vials;
  - d. a second drain associated with the second bank of vials;
  - e. a dispensing system configured to sequentially dispense selective ones of the plurality of reagent solutions into the plurality of vials; and
  - [d.] f. a purging system configured to [selectively] purge material from a selective one of the first bank of vials and the second bank of vials, wherein the purging system is configured to engage the selected one of the first drain and the second drain to purge material.

22. (Amended) The synthesizer according to claim [21] 20 wherein the purging system further comprises a waste tube capable of selectively coupling with a selective one of the first drain and the second drain to purge material from the first bank of vials and the second bank of vials.

Please add the following new claims:

35. (New) A synthesizer for forming a polymer chain by sequentially adding monomer units found in one of a plurality of reagent solutions, the synthesizer comprising:
- a. a cartridge configured to hold a first vial and a second vial, each for holding a selective one or more of the plurality of reagent solutions during synthesis;
  - b. a dispensing system configured to dispense the selective one or more of the plurality of reagent solutions into the first and second vials; and
  - c. a purging system configured to selectively expel material from the first and second vials, wherein a selective one or both of the purging system and the cartridge are moved in relation to each other in order to allow the purging system



to engage a drain associated with a selective one of the first vial and the second vial and thereby expel material from the selected one of the first vial and the second vial through the purging system when the drain is engaged.

36. (New) The synthesizer according to claim 35 wherein the cartridge holds the first vial and the second vial along a circular perimeter of the cartridge.

37. (New) The synthesizer according to claim 35 further comprising a motor coupled to the cartridge configured to selectively rotate the cartridge relative to the dispensing system in a circular motion.

38. (New) The synthesizer according to claim 35 wherein the dispensing system further comprises:

- a. a plurality of valves for controlling dispensing of the plurality of reagent solutions; and
- b. a plurality of dispense lines wherein each of the plurality of the dispense lines is coupled to a corresponding one of the plurality of valves for delivering one of the plurality of reagent solutions to a selected vial.

39. (New) The synthesizer according to claim 35 wherein each of the first vial and the second vial further comprise a bored interior having a consistent dimension for maintaining a consistent flow through the first and second vials and are configured to hold a frit for retaining a solid material above the frit.

## REMARKS

Applicants respectfully submit that the Claims 1- 20, 22, 23 and 35-39 are in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, the Examiner is encouraged to call the undersigned at (650) 833-0160 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,  
HAVERSTOCK & OWENS LLP

Dated: July 9, 2001

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### Attorneys for Applicants